

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Claims 1, 7, and 14 are currently being amended and claim 6 is cancelled without prejudice. After amending the claims as set forth above, claims 1-5 and 7-20 are now pending in this application.

Rejections under 35 USC 103:

The Examiner has rejected claims 1-20 under 35 U.S.C. § 103 (a). In Section 3 of the Office Action, claims 1, 2, 4, 5, 7, 8, 10, 11, 13-17, 19, and 20 are rejected as unpatentable over Tange et al (U.S. patent No. 6,156,485) in view of Maa (U.S. Patent No. 4,460,435). In Section 4 of the Office Action, claims 3, 6, 9, and 18 are rejected as unpatentable over Tang et al., Maa, and McKee (U.S. Patent No. 4,804,088). Applicants respectfully traverse the rejections.

Independent claim 1 has been amended to include the limitations of dependent claim 6. Independent claims 1, 7, and 14 have been amended to further clarify the trim etching operation described by the Applicants in the patent application. The amendment is supported at least by paragraph [0035] of the present application. No new matter is added.

The Examiner argues:

....by performing the trim-etching step described by Maa in the patterning process of Tang et al., a trim etched reflective layer would be obtained in Tang et al., and this trim etched layer would be used as a mask to etch the gate material layer below it for the intended purposes of obtaining narrower lines.

(Office Action dated September 25, 2003, page 6.) Applicants disagree.

The trim-etching process described by Maa applies an isotropic etch to a metal silicide layer 18 and a polysilicon layer 16. There is no suggestion to modify Maa to apply an isotropic etch to any other kind of layers, including the layers described by Tang et al. Tang et al. does not provide a suggestion or motivation to use an isotropic etch or a trim etch to any of its layers. Further, there is no teaching or suggestion that Tang et al. use a “trim etched layer ... as a mask to etch the gate material layer below it for the intended purposes of obtaining narrower lines” as the Examiner suggests.

As amended, claim 1 requires:

trim etching the reflective metal material layer to form a mask pattern, wherein the anti-reflective coating is removed during the trim etching.

As amended, claim 7 requires:

removing portions of the gate material layer using the trim etched reflective metal layer as a hardmask, wherein the mask layer is stripped during the trim etching of the reflective metal layer.

As amended, claim 14 requires:

the ARC layer and portions of the reflective layer are removed using trim etching.

Maa does not show anything happening to the resist layer 20 above the metal silicide layer 18 and polysilicon layer 16 that are trim etched. Even if Tang et al. suggested that W hardmask 230 were trim etched (which it does not), the ARC layer 240 above it is not removed when the W hardmask 230 is etched. Indeed, Figs. 4B and 4C of Tang et al. show ARC layer 240 remains long after W hardmask 230 is patterned. McKee also fails to show the stripping of the above layer during a trim etch.

Accordingly, Tang et al., Maa, and McKee (alone or in combination) fail to disclose, teach, or suggest all of the limitations of claims 1-5 and 7-20. Applicants, therefore, respectfully request withdrawal of the rejections.

Applicant believes that the present application is now in condition for allowance.
Favorable reconsideration of the application as amended is respectfully requested.

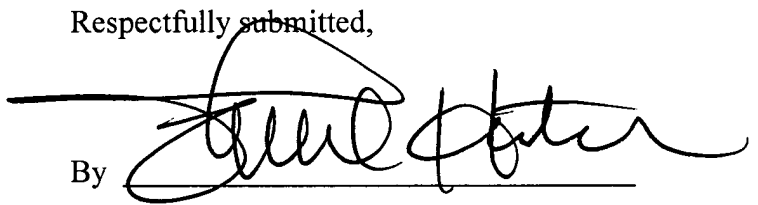
The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-2350. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-2350. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-2350.

Respectfully submitted,

Date October 21, 2003

By

A handwritten signature in black ink, appearing to read "Paul S. Hunter", written over a horizontal line.

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